

SCIENCE, RELIGIOUS NATURALISM, AND BIBLICAL THEOLOGY: GROUND FOR THE EMERGENCE OF SUSTAINABLE LIVING

by George W. Fisher and Gretchen van Utt

Abstract. During this century, humans must learn to live in ways that are sustainable, both ecologically and morally. The global community already consumes more ecological resources than Earth can generate; population growth and increasing development are widening that gap. We suggest that paths to sustainability can be found by mindful reflection on meanings discerned in the convergence of a scientific understanding of nature, religious naturalism, and biblical understandings of creation. The patterns of ecological sustainability observed in natural systems and the wise ways of relating to the land discerned in the Hebrew Bible suggest that sustainability must be grounded in social and ecological justice and that just ways of living can emerge from a deep sense of the ways in which nature and all of humanity are interdependent. We conclude that the twentieth-century emphasis on individual control of our future must make room for the emergence of a new understanding of mutuality. There can be no flourishing apart from mutual flourishing.

Keywords: biblical theology; community; ecology; emergence; mutuality; religious naturalism; sustainability

THE CHALLENGE OF SUSTAINABLE LIVING

The twentieth-century dream of *progress* seems to be giving way to talk of sustainable living, and for good reason. The global community already consumes ecological resources more rapidly than Earth generates them, and the combination of rising population and increasing consumption are widening that gap (Hails 2006). In *A Short History of Progress* (2004) Ronald

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Wright reminds us that we are not the first society to exceed the capacity of our resource base and that when prior societies did so the results were disastrous. However, because we have the advantage of knowing about past failures and how they might have been avoided, Wright ends on a note of cautious hope: "We have the tools and the means to share resources, clean up pollution, dispense basic health care and birth control, set economic limits in line with natural ones. If we don't do these things now, while we prosper, we will never be able to do them when times get out of hand. Our fate will twist out of our hands. . . . Now is our last chance to get the future right" (2004, 132).

But we do not have much time to change course and begin to adopt sustainable ways of living. By the time today's college seniors turn 65 and begin to retire, Earth's population could be 9 or 10 billion people, about 3 billion more than it is today (*World Population Prospects: Population Database* 2004). What wisdom will today's college seniors need as they try to get the future right?

It goes without saying that to decide what ways of living are ecologically sustainable our seniors will need the best available science: the natural, social, and applied sciences, especially those vital to understanding natural resources, to growing food, and to maintaining health. But science alone will not be enough. Levels of development and consumption already vary dramatically from region to region, and those differences are likely to increase, because population increases are concentrated in less developed areas while consumption increases are concentrated in more developed regions. Our seniors must decide whether increasingly unequal use of resources is morally sustainable, and to do that they will need to situate scientific knowledge in the broader context of moral, ethical, and religious wisdom.

Religious naturalism can make substantial contributions to that moral conversation. The beginnings are already in place. In *The Sacred Depths of Nature* Ursula Goodenough points to the need for a global ethos that can encourage us to "share the Earth with one another and with other creatures" (1998, 172). And her *Zygon* essay with Paul Woodruff suggests that an attitude of mindful reverence grounded in religious naturalism is a good context for emergence of that kind of ethos (Goodenough and Woodruff 2001). To be effective, however, we believe that an ethos also must connect with traditional religious thought, partly because other religions have much to offer this effort and partly because many people turn to those traditions for moral guidance. In North America, for example, 84 percent of the population self-identifies as Christian and are unlikely to accept an ethos that does not seem coherent with the moral traditions of the Bible.

Fortunately, there are deep connective currents between science, the moral visions emerging from religious naturalism, and biblical theology. The people of the Bible lived in a region where growing food was difficult, and

they knew, deep in their bones, that they were utterly dependent upon the land. When the land provided food, they lived well. When the rains failed, or came at the wrong time, or when invading troops trampled the grain, they went hungry. Survival demanded that they reflect deeply on how to relate to the land and how to understand their dependency on the land.

Walter Brueggemann (2003b) has shown that questions of how to live fruitfully in the land and how to use the land wisely are central to the entire biblical canon. The moral perspective on land and land use that pervades these scriptures offers a carefully thought-out response to prior mistakes, and we can learn much about how to live fruitfully in our increasingly crowded world from the experience of those cultures. Wright makes nearly the same point. Although the problems we face today differ in scale from those of prior civilizations, the problems themselves are not entirely new. For thousands of years, despite wise warnings, people have consistently gone in directions that turned out to be ruinous, “[driving] themselves out of Eden” (Wright 2004, 9).

In this essay, we take up some of the themes from Jewish and Christian thought that seem to offer fertile ground for emergence of a modern global ethos of sustainability, connect those images to the understandings of science, and reflect on ways in which scientific and religious images resonate with one another and with religious naturalism. We sketch a context for the emergence of a constructive set of answers to how we might get the future right.

Our attempt is at best a starting point for this conversation. For an ethos to be truly global, it must of course draw on religious traditions other than Christianity and Judaism. But limitations of space and our own knowledge require that we leave those explorations to others who are better qualified. Even in this limited domain there are obstacles. Many in the Christian community have missed the importance and the meaning of some of the key biblical texts, taking them too literally or reading them in ways not consonant with ancient culture. The approach we advocate is common in the scholarly community and in progressive strands of Christian thought but may feel new to conservative Christians.

We also realize that engaging these traditional sources may seem awkward to some religious naturalists who have been attracted to that community precisely because they have become disenchanted with traditional religion. Religious naturalism is an emerging tradition, still establishing its identity and its central affirmations. Some in that community will not feel ready to reengage traditional religious thought. Our graduating seniors remind us that time is short, however, and we must begin this conversation despite the difficulties.

We hope that an approach of mindful reverence can help both to overcome these difficulties and to frame constructive responses to questions of how to get the future right. Mindful reverence is different from analytical

reflection. It is a state of deep subjective awareness in which we engage nature, the world, and one another with all of our being, with our hearts as well as with our minds. Because it incorporates all ways of knowing, objective and subjective, scientific and aesthetic, it offers a way of transcending conceptual differences and makes real dialogue possible.

We are not saying that differences disappear. Our point is that in mindful reverence the exclusivity of these different approaches disappears, and we begin to sense an emergent, transcendent connectedness in which conceptual differences lose their importance and become differences of taste, preference, or perspective. Dissonance can become resonance, and conflict, complementarity.

The approach of mindful reverence is deeply biblical. Psalm 19 is a good example. It opens with the lines:

The heavens are telling the glory of God;
and the firmament proclaims his handiwork.
Day to day pours forth speech,
and night to night declares knowledge.
There is no speech, nor are there words;
their voice is not heard;
yet their voice goes out through all the earth,
and their words to the end of the world. (Psalm 19:1–4a NRSV)

These lines refer to God's word but insist that there are no *words*, no voice to be heard, but simply the harmony of wisdom that goes out through all the Earth to the end of the world. For us, they beautifully capture the sense of engagement with mystery and presence that we sense at the heart of religious thought. The lines are poetry, inviting us to respond mindfully and reverently to the creativity in that mystery. They are not expository prose, asking us to listen vainly for a *voice*, audible to all.

The verses that follow (19:4b–6) give an example of the orderliness of nature by describing how the sun obediently runs its daily course and how nothing is hidden from its nurturing warmth. Then we come to these lines on the law:

The law of the LORD is perfect, reviving the soul;
the decrees of the LORD are sure, making wise the simple;
the precepts of the LORD are right, rejoicing the heart;
the commandment of the LORD is clear, enlightening the eyes;
the fear of the LORD is pure, enduring forever;
the ordinances of the LORD are true
and righteous altogether. (19:7–9 NRSV)

These lines clearly refer to the legal code of Moses, but coming right after a lyrical description of how nature's orderliness reveals God's glory they also suggest that the law of the Lord includes not only the moral codes that shape human living but also the natural laws that order nature. The psalm implies that the two kinds of law are deeply connected, differing more in

the domain to which they apply than in the laws themselves.

After a few more lines praising the legal code (and, we take it, natural law), the psalm concludes with the prayer:

Let the words of my mouth and the meditation of my heart
be acceptable to you,
O LORD, my rock and my redeemer. (19:14 NRSV)

In the cosmic context of this psalm, these lines remind us that we are not the source of our well-being; that life itself is a gift of the amazing fertility of cosmos, land, and water. They seem to say that if our lives are to be fruitful we must live in ways that honor that gift, ways that are in harmony with natural law, ways that are shaped by mindfulness, reverence, and gratitude to the source of the gift, whether we understand that source in terms of the theistic language of the Bible or in terms of a mysterious sense of sacredness found in the depths of nature. We hear that prayer as an invitation to allow our lives to be in harmony with this fertile combination of moral insight and natural law, an invitation to seek a global ethos in the confluence of nature, religious naturalism, and biblical theology.

DISENTANGLING CREATION AND EVOLUTION

Many people see the creation story of Genesis 1 as a major stumbling block to dialogue between science and religion, so we may well begin by reexamining that story. In majestic language, it opens “In the beginning when God created the heavens and the earth” (Genesis 1:1 NRSV), describes six days in which God speaks everything into being, declares each good, and invites it to be fruitful, and ends with a seventh day that defines the Sabbath tradition of rest, a day well suited to reflection on what fruitful living might entail.

Modern readers easily miss the point of this text, reading it as a prescientific paper on cosmic origins intended to explain the mechanics of creation. But the story says almost nothing about how God created anything. At first God simply spoke things into being: “Let there be light” (v. 3), and there was. Later on, God said, “Let the earth put forth vegetation” (v. 11), and it did. There are no details about how the earth put forth vegetation, though any Israelite farmer could have given a good description of how young seedlings germinate in good soil.

In its biblical context, Genesis 1 serves as an affirmation of the moral or theological context of creation, not as an explanation of how creation happened. As Brueggemann puts it, the world “belongs to God, is formed and willed by God, is blessed by God with abundance, [and] is to be cared for by the human creatures who are deeply empowered by God, but who are seriously restrained by God” (Brueggemann 2003a, 31). William Chalker argues explicitly that the framework for the creation stories is teleological, not mechanistic, and that the purpose of human life is to image “YHWH’s

character of loving kindness” (Chalker 2006, 183). William Brown shows that, like Psalm 19, the creation stories presume that cosmic order and individual conduct are intended to be coherent (Brown 1999, 13). In other words, the point of the creation stories is that God, or the mysterious creativity found in the depths of nature (Kaufman 2004), is the source of all that is, and intends good for all creation.

Seen in this way, the creation stories are complementary to scientific accounts of creation, not contradictory. Genesis tells us *that* God created humans and cosmos but says almost nothing about how anything actually emerged. Science tells us a great deal about *how* things came to be but nothing at all about *why* they came to be.

It seems to us that the holistic perspective of mindful reverence provides a perfect approach for exploring that complementarity between science and theology. In place of the analytical approach we are accustomed to, mindful reverence invites us to read texts in ways that allow us to sense the meaning of a story rather than focusing only on the details of the narrative.

This way of reading a story is very much like the ways of listening found in oral traditions like those in which the biblical narratives emerged. The details tend to vary with teller and audience; what matters is that the story be told so as to be full of meaning for the community gathered in a particular time and place. When Black Elk finished the story of how the Sioux acquired the peace pipe, he is said to have said: “This they tell, and whether it happened so or not I do not know; but if you think about it, you can see that it is true” (Neihardt 1988, 5).

When we listen to different stories this way, seeking the truth of meaning rather than the truth of facts, we still notice the differences between stories, and we may find that we value one story more than another. But we acknowledge that good stories all convey some aspect of the whole, though each may miss something. Differences between stories are no longer threatening but instead become fertile ground for insightful reflection, and in the resonance between them we may sense the emergence of still deeper layers of truth.

For example, as we consider the time span involved in the evolutionary story, we might try to visualize a journey in which we travel back in time, one millimeter each year, or one meter each thousand years (Fisher 2004, 739–42). Going back to the discovery of the Americas takes a journey back in time roughly 500 years, half a meter. Going back to the Sumerian city-states takes a 7,000-year, 7-meter journey.

On that scale, we can image a journey back to the origins of the solar system by a trip beginning at the Washington Monument in Washington, D.C., traveling all the way across the country to San Francisco, California. Going back to the Big Bang would take us on across the Pacific, virtually to Japan. If we then reverse course, returning to the present at one millimeter per year, one meter per millennium, we see Earth begin to form as

we reach San Francisco, we watch the first life emerge as we pass Great Salt Lake in Utah, we see the first multicellular creatures emerge in central Ohio, and watch the dinosaurs give way to mammals in the aftermath of a meteorite impact as we reach the suburbs of Washington, D.C. We do not meet the first tool-using hominids until we cross the Potomac River, just two kilometers west of the Monument. We meet the cave artists of Lascaux thirty meters from the Monument and watch the whole of human civilization unfold within the base of the Monument itself.

The point, of course, is that we are very, very late arrivals on the scene, very much a part of nature, and totally dependent upon evolutionary patterns established during the 4 billion years of biological history that preceded us, a perspective that is deeply consonant—except, of course, for the time span involved—with that of Genesis 1.

We know a lot about the dynamics of evolution, and other papers in this issue of *Zygon* help us to see those dynamics through the lens of emergence. Here, however, we want to reflect on insights found in a more imaginative telling of the story—Loren Eiseley's account of the snout's evolution.

The story begins "as such things always begin—in the ooze of unnoticed swamps, in the darkness of eclipsed moons. It began with a strangled gasping for air" (Eiseley 1973, 49). Its stage is a dying pond, slowly evaporating under a relentless sun:

On the oily surface of the pond, from time to time a snout thrust upward, took in air with a queer grunting inspiration, and swirled back to the bottom. The pond was doomed, the water was foul, and the oxygen almost gone, but the creature would not die. It could breathe air direct through a little accessory lung, and it could walk. In all that weird and lifeless landscape, it was the only thing that could. It walked rarely and under protest, but that was not surprising. The creature was a fish.

In the passage of days the pond became a puddle, but the Snout survived. There was dew one dark night and a coolness in the empty stream bed. When the sun rose the next morning the pond was an empty place of cracked mud, but the Snout did not lie there. He had gone. Down stream there were other ponds. He breathed air for a few hours and hobbled slowly along on the stumps of heavy fins.

It was an uncanny business if there had been anyone there to see. It was a journey best not observed in daylight, it was something that needed swamps and shadows and the touch of the night dew. It was a monstrous penetration of a forbidden element, and the Snout kept his face from the light. It was just as well, though the face should not be mocked. In three hundred million years it would be our own. (1973, 51)

This passage reminds us that evolution happened during the hard times, when creatures encountered conditions for which they were not suited. Many simply died, but one or two dared to try a new way of living, and we are here, in part, because of the courage of those few who did.

We see evolution and the emergence that makes evolution possible as more than a grand epic of increasing biological or neurological complexity,

more than the mechanics of genetics. It is all of those things, but it is also a record of individual struggle and courage, of stubborn refusal to give up in the face of odds that must have seemed overwhelming, a story of personal failure and personal triumph. Our lives are a gift of a cosmic creativity that, against all the odds of entropy, found a way of giving existence to all that is, and did so through the personal courage and creative choices of individual organisms as they struggled to make sense of the daunting changes they confronted.

The creation story of Genesis 1 emerged in struggle. It was written soon after the destruction of Jerusalem in 587 B.C.E., in the worst of times for Israel. The leaders had been exiled to Babylon. The Temple had been destroyed, making temple sacrifice, the major form of worship, impossible. The land, the heart of the covenant, had been lost. Everything the Israelites had taken for granted was gone. But they did not give up. They decided that they must have understood God's message wrongly, and, in an extraordinary example of mindful reverence and creative imagination, they rethought and rewrote much of Torah, giving it the canonical shape we know today.

And they did something even more surprising. The standard creation story in Babylon and in other non-Jewish parts of the Middle East was the *Enuma Elish*, a long, complex, and violent story. In the beginning there was watery chaos shrouded in darkness. Then Marduk, the Sun of the Heavens (and the principal god of Babylon) appears, dispels darkness, overcomes chaos, and creates first the heavens, then Earth, stars, and, at the end, humans. The final stage is a banquet, in which the gods celebrate the success of creation and its creator.

Genesis 1 clearly echoes that story. As the Israelites rethought their understanding of how to live and how to relate to God during exile, they seem to have decided to adopt the outline of their captor's creation myth. But in a remarkable act of courage and subversion, they changed the story radically. In the *Enuma Elish*, creation emerges from warfare within the pantheon of Babylonian gods, in a tale of duplicity in which the main characters are capricious and give no sense of a larger purpose beyond personal triumph. Genesis 1 transforms the story so as to reflect the Israelite understanding of God as majestic, trustworthy, and purposeful, an understanding that sees creation as revelatory of divine trustworthiness and invites humans to find fulfillment by living in ways that image God's character. The *Enuma Elish* depicts creation as the result of conflict between competing interests. Genesis insists that creation is the result of a single creative impulse at the heart of all that is, that creation itself is fundamentally good, and that life, spirit, and courage are gifts from that source, gifts to be trusted and lived as creatively and as faithfully as possible.

The connections between Genesis 1 and the *Enuma Elish* again show that the details of the story were not central to the story's meaning for the

Israelites. The biblical authors were perfectly willing to adopt the Babylonian account of creation and to include it right alongside the earlier and very different story of creation in Genesis 2. What mattered was the character of the creator God. The Israelites were content to accept the Babylonian narrative, as long as it was made to convey the correct theological or moral meaning: the understanding that humans and the cosmic system that sustains us were both created and sustained by a majestic, mysterious force with purposes of its own, purposes that cannot be subverted to serve creaturely whims. The remainder of Genesis—and much of the Bible—can be read as a sustained reflection on why it is important to resist the constant temptation to forget the purpose of creation and to manage creation in ways that serve only human needs.

The biblical indifference to the mechanics of creation leaves plenty of room for the modern story of evolution and emergence. The epic of evolution allows us to fill in many of the details of how creation happened. But the biblical accounts invite us to look behind those details, to reflect mindfully and reverently upon the loom of something mysteriously creative that we sense in the depths of nature, something that some of us call the ground of being, Spirit, or Creativity (Kaufman 2004).

We feel an urgent need for that kind of reflection now. We are beginning to realize that the Enlightenment vision of controlling nature was simply a modern version of the ancient temptation to ignore the larger purposes of creation. Creation has a purpose that intends for humans to flourish along with the whole of nature, and humans need to align themselves with that larger purpose. The scientific accounts of evolution offer wonderful glimpses of the beauty and creativity in the gradual development of life, glimpses that resonate richly with much of the wisdom of biblical theology (Brown 1999).

JUSTICE, AND ONLY JUSTICE

Wright's book ends by saying that our best chance of getting the future right is to learn from the mistakes of past societies (2004, 132). People are sometimes surprised to learn that the Bible—especially the Hebrew Bible—is a rich source of that kind of wisdom. Questions of how to live fruitfully in the land are precisely the issues that Abraham raised with his God, time and time again—questions starkly posed by the initial barrenness of Abraham's wife, Sarah, and by the barrenness of the land that Abraham abandoned for Canaan (Brueggemann 2003b, 16–25).

The themes that Brueggemann discerns in biblical reflection on how humans are to live in the land resonate deeply with contemporary concerns about getting the future right. He begins by reminding us that the biblical narrative alternates between times when the Jewish people had no land and when they lived in land that required wise management.

When the Israelites were landless—during the Exodus from Egypt and the Exile in Babylon—they engaged in deep introspective thought on how humans should understand land, and on the nature of fertility (Brueggemann 2003b, 27–65). Each time, they understood land as a gift entrusted to them in covenantal relationship, an insight beautifully articulated in Deuteronomy:

For the LORD your God is bringing you into a good land, a land with flowing streams, with springs and underground waters welling up in valleys and hills, a land of wheat and barley, of vines and fig trees and pomegranates, a land of olive trees and honey, a land where you may eat bread without scarcity, where you will lack nothing, a land whose stones are iron and from whose hills you may mine copper. You shall eat your fill and bless the LORD your God for the good land that he has given you. (Deuteronomy 8:7–10 NRSV)

But the covenant comes with a warning:

When you have eaten your fill and have built fine houses and live in them, and when your herds and flocks have multiplied, and your silver and gold is multiplied, and all that you have is multiplied, then do not exalt yourself, forgetting the LORD your God, who brought you out of the land of Egypt, out of the house of slavery, who led you through the great and terrible wilderness. . . . (Deuteronomy 8:12–15 NRSV)

That kind of forgetfulness has always been a temptation for people who are well off. It is easy to assume that we are personally responsible for our success—to forget the source of our well-being and to assume that we can ensure it ourselves. This assumption easily leads those who are well off to think that they, and only they, are entitled to the benefits of the land. So, a little further on, Deuteronomy reminds all of us that the covenant—the promise of the land—is for all the people, not just the powerful: “Justice, and only justice, you shall pursue, so that you may live and occupy the land that the LORD your God is giving you” (Deuteronomy 16:20 NRSV).

The implication is crystal clear: Those who do not pursue justice, and only justice, will no longer be permitted to occupy the land. The land must be understood as a blessing given to all who depend upon it. And, just as people must live in ways that do not exploit others, they must live in ways that do not exploit the land. The land was not an object given simply for their benefit and profit. It too was a party to the covenant, and so justice must be extended to the land as well as to all who live on the land. Leviticus put it this way:

When you enter the land that I am giving you, the land shall observe a sabbath for the LORD. Six years you shall sow your field, and six years you shall prune your vineyard, and gather in their yield; but in the seventh year there shall be a sabbath of complete rest for the land, a sabbath for the LORD: you shall not sow your field or prune your vineyard. (Leviticus 25:2–3 NRSV)

The message of justice, both social and environmental, is easy to forget. When the Israelites lived in the land—during the times of David and Solo-

mon, prior to the Exile, and again after their return from Exile—they were faced with the problem of managing the land (Brueggemann 2003b, 67–122). As they began to focus on management, their understanding of the land and of their relationship to the land changed. They began to see the land as *property* rather than as party to the covenant. And as they began to think of land as property, their goal became productivity of the land *for the owners*, displacing any sense of their responsibility to the land itself or to the poor of the land.

Each time the focus on justice gave way to a focus on productivity, the Israelites managed the land in ways that turned out to be destructive. Each time they lost the land, just as Deuteronomy had warned. That shift from seeing land as gift to all to seeing land as property of the powerful is a critical turning point in the biblical narrative. The shift began soon after the Hebrew people first entered Canaan. Noticing that their neighbors were ruled by kings, the Israelites decided that they too needed a king. Their first king, Saul, was a failure, and the search for a replacement led to David, who trusted God's promise and became a renowned warrior, loved by the people. His victory over Goliath, without shield or sword, revealed a deep conviction that weakness, vulnerability, and trust could against all expectations triumph over brute strength and intimidation.

When David began to rule, he retained a sense of trust in God's promise and succeeded in uniting the northern and southern kingdoms, initiating a period that turned out to be the height of Israel's fortunes. But the story does not end there. David had all the power, security, and comfort one could ever need, but he became preoccupied with personal power, grasping more and more, trusting only in military might. He began to believe that God's favor was automatic and irrevocable, no matter how he lived. He forgot to ensure the well-being of the people and saw them merely as means to his own well-being.

That focus on David's own well-being is captured by another well-known story, his encounter with Bathsheba. At first, the story seems to have nothing to do with the theme of land. In the biblical context, however, it has everything to do with land. The Hebrew Bible insistently draws parallels between natural and human fruitfulness (Brueggemann 2003b, 173). Both depend upon covenantal faithfulness. Both flourish through a combination of intimate care and mutuality. Neither can tolerate abuse. David's taking of Bathsheba was abusive at every level. It began in David's abuse of his role in Israelite society, lazing around the palace instead of leading the troops against Rabbah. It took form in the taking of a married woman by a king. It culminated in the arranged murder of her husband once she became pregnant. And it eventuated in the birth of Solomon, who became a king supremely confident of his mastery of the land on his own terms, not those of Torah. He paid no attention to the suffering of the people, or to the needs of the land, or to the claims of YHWH.

On the surface, Solomon's reign was the high-water mark of the monarchy. He built a magnificent palace lined with cedar imported from Lebanon, mined gold in Saudi Arabia, and built the Temple that established the style of Jewish worship for a thousand years. The stated purpose of the Temple was to honor God. But the effect—and perhaps the real purpose—was to legitimize Solomon's regime, to change worship into a static cult, abandoning the power and the vigor of the old traditions, and to portray God as “a domesticated preserver of [the] regime” (Brueggemann 2003b, 81). The God who had given the land was now cast as patron of the king who owned the land. In the end, the abuse of the land and of the people by David, Solomon, and most of the kings who succeeded them, and their persistent disregard of YHWH's warnings, led to loss of the land, exactly as Deuteronomy had warned. In contemporary terms, ways of living that failed to include just treatment of the land or the people turned out to be unsustainable and led to loss of the land and to disaster for all who depended on the land, both the powerful and the powerless. In human society, community matters, and matters deeply.

Israel had known from the beginning that kings might misuse power, and they had tried to imagine a new kind of kingship that would treat the land as a gift to all rather than as a royal possession, as foreign kings did. Israel tried to ensure this difference by requiring that their kings be chosen from among the Israelite community, so that they would know what it was to be Jewish; by not permitting kings to amass wealth, so that their power would be rooted in God and the people, not in personal resources; and, most important, they required the king to read Torah, to make sure that the king and the community remembered where they came from and who they were. For the Jewish community, regular reading of Torah was and is a practice of mindful reverence, or reverent remembering.

At this point, three strands of wisdom seem to converge. Wright says that our best chance of getting the future right is to learn from the experience of past societies. Religious naturalists sense that mindful reverence, an attentive remembering of our story and our place in the scheme of things, can be a way of finding meaning and value. And the central activity of Israel's rulers was to be reading of Torah, to help them remember who they were and where they came from.

These three sources of wisdom—secular thought, religious naturalism, and scripture—start in very different places but seem to converge on the central importance of remembering. The heart of that remembering is simple: “Justice, and only justice, you shall pursue, so that you may live and occupy the land that the LORD your God is giving you” (Deuteronomy 16:20 NRSV).

As it turns out, mindful reflection on natural creativity reveals that ecosystems function in ways similar to those mandated by Torah. All life on Earth's surface depends on the ability of plants to photosynthesize, using

the sun's energy to convert water and carbon dioxide into the complex organic molecules of life. Because the system is closed to everything that we need except energy, the ingredients of life have to be endlessly recycled. The most obvious example of that recycling is the food chain, in which carbon, energy, and nutrients move from plants to herbivores and from there to one or more levels of carnivores. Less obviously, the waste material produced by plants and animals—roughly two tons of litter per acre in the forests of this region—is converted back into a form that plants can use by bacteria, fungi, and other microorganisms living in the soil (Perry 1994, 388–438). Without those microorganisms, the entire ecosystem would be unsustainable. In nature, community matters, and matters deeply.

The system requires more than a smoothly functioning food chain. When a majestic oak dies in an Eastern hardwood forest, the shade-loving plants that had flourished on the forest floor are exposed to direct sunlight and die off, exposing the soil to erosion, the enemy of any ecosystem. But the system has evolved a way of coping (Perry 1994, 128–70). Weeds that flourish in the full sun—ragweed, crabgrass, and goldenrod—quickly put down roots, protecting the soil. In a year or two, grasses, small shrubs, and briars gradually take over, putting down deeper and stronger roots. In time, oak saplings begin to grow, but with difficulty. Saplings don't do well in full sun, and deer tend to browse any that do take root. The saplings most likely to survive are those that take root beneath briars or bushes that provide shade and protect them from deer. In time, one or two of those sheltered saplings will grow to mature trees, making the forest canopy intact again. As the canopy fills in, the shade deepens, and the briars and shrubs that once nurtured the saplings can no longer survive.

Those pioneer weeds, briars, and shrubs have no permanent place in the mature forest. They survive by lurking on the edges of the system, wherever gaps temporarily appear. But they play a vital role in the system by providing the resilience that allows the forest to survive and gives life to the forest, not just to individual trees. The canopy species in these forests live only two or three centuries, but the succession sequence provides the resilience that has enabled the forests to flourish 15,000 years, since the end of the glacial period. In addition to the oaks that we find so majestic, a healthy forest requires all of the organisms that define the food chain and also all of the species that enable ecological succession to sustain the forest over time.

In nature, community matters, and matters deeply. The communities that sustain healthy ecosystems function by a balanced combination of individual well-being and reciprocity. Complex organisms cannot live alone. Organisms that abuse the resource base exhaust essential resources and die out. Ecologists recently have begun to realize that symbiosis, mutualism, and facilitation are much more important in ecosystems and in evolution than previously realized. Many symbiotic relationships seem to have begun as predatory relationships that evolved into strategies that benefit both species.

In both human and natural communities, communal relationships grounded in mutual well-being are essential to the flourishing of all community members—wealthy and poor, grand oak and soil microorganism. In ecological communities, those relationships are defined by chemical flows of energy and nutrients within a food web. In human communities, they are defined by conscious flows of economic, political, cultural, and psychological resources through all the channels of society. We suspect that the flourishing of both ecological and social communities in our increasingly crowded world may depend on how good we are at realizing the promise of mutuality. Nurturing a deep sense of the benefits of mutuality and learning to act on that awareness may be exactly what it takes to get the future right.

EXODUS AND EMERGENCE

Nurturing awareness of the importance of mutuality and having the courage to act on that awareness is not easy in today's world. Western society has long been committed to the ideals of individualism and autonomy; learning to trust community and mutuality takes courage and conviction. But in the confluence of science, religious naturalism, and biblical theology we see grounds for trust. Trust in a loving, creative God is the ground of biblical theology. Mutuality is the ground of individual well-being in ecological community, the context that has made evolution possible.

And as we reflect mindfully and reverently on emergence, the theme of this conference, we sense promise at many levels.

First, emergence reminds us that solutions to complex problems do appear but that they are unexpected and hard to discern in advance. They take us by surprise and often seem contrary to conventional logic. That being so, perhaps our awareness that the future is unclear and that we are not sure what to do is a hopeful sign indicating that the time is ripe for new visions, a time when we should listen to counterintuitive ideas, looking for the germ of "something more" they might contain.

Second, solutions bubble up by interactions among ingredients already in place. There are no magic bullets, no solutions passed down from above. We must stir the pot energetically and imaginatively, trying new solutions as they emerge.

Third, our 13.7 billion-year cosmic history reminds us that emergence *does happen*. Effective solutions may not emerge on the schedule we would wish, but they do emerge. We must not allow ourselves to be discouraged.

We are encouraged by the fact that many of our religions offer similar lessons. In the Judaeo-Christian tradition, for example, the story of the Exodus seems particularly relevant. We who live in Western cultures have allowed ourselves to become enslaved by the Enlightenment ideals of material progress and control, confident that we can shape our future. But in

today's world we must admit that we are not in control. Like the Israelites, we must allow ourselves to be led into a new world that will feel at first like a wilderness—a world of mutuality in which we trust that sustainable ways of living can emerge, though we can discern no more than the outlines of that world. We must have confidence that the magnificent creativity in our midst, the profound mystery, the ground of our being that we call YHWH, is giving birth to a new and promising world—in us, among us, through us, and through all creation.

NOTES

1. This essay summarizes ideas offered in daily chapel talks at the Star Island conference, "Emergence: Nature's Mode of Creativity," organized by the Institute on Religion in an Age of Science, 29 July–5 August 2006.

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